REMARKS

Favorable reconsideration of this application, as presently amended, is respectfully requested.

Claims 1, 4-7 and 11 are now active in this application, Claims 2, 3 and 8-10 having been canceled by the present amendment.

This application is a Continuation of patent application Serial No. 09/482,936, filed January 14, 2000, now pending, which is a Continuation-in-Part Application of U.S. Application Serial No. 09/185, 098, filed November 3, 1998, and abandoned May 22, 2000. In the previous outstanding official Office Action dated September 14, 2000, the disclosure was objected to because of informalities; Claims 1, 4-7 and 11 were rejected under 35 U.S.C. §102(b) as being anticipated by Nakashiba et al. (U.S. Patent 5,762,539); and Claims 2, 3 and 8-10 were objected to as being dependent upon a rejected base claim.

In response to the objection to the disclosure, the informalities noted have been corrected herewith. Accordingly, no further objection on that basis is anticipated.

Briefly recapitulating, Claim 1 is directed to a wafer polishing head for planarizing a wafer. For example, referring to the non-limiting embodiment of Figs. 2A and 2B, the wafer polishing head includes a carrier 62, a wafer adhering layer 64, a retaining ring 72, a first pressure chamber 68, a second pressure chamber 74, and an automatic control system 90. The carrier 62 is configured to load the wafer 66. The wafer adhering layer 64 is disposed beneath the carrier 62. The retaining ring 72 surrounds the carrier 62 and the wafer adhering layer 64. The first pressure chamber 68 has a first inner pressure which is disposed above the retaining ring 72. The second pressure chamber 74 has a second inner pressure which is disposed on the carrier 62. A relative height between the retaining ring 72 and the carrier 62

can be adjusted by changing the first and the second inner pressure. The automatic control system 90 is respectively coupled to the first pressure chamber 68 and the second pressure chamber 74 and for adjusting a relative height between the carrier 62 and the retaining ring 72. The automatic control system 90 receives a first feedback pressure signal 100 which is transmitted from the first pressure chamber 68 and a second feedback pressure signal 104 which is transmitted from the second pressure chamber 74 while a chemical-mechanical polishing process is performed. The automatic control system 90 respectively transmits a first pressure value 108 and a second pressure value 110 to the first pressure chamber 68 and the second pressure chamber 74. While chemical mechanical polishing process is performed, a feedback pressure signal 100 denoting the inner pressure of the first pressure chamber 68 is transmitted from the first pressure chamber 68 to the automatic control system 90. Simultaneously, a feedback pressure signal 104 denoting the inner pressure of the second pressure chamber 74 is transmitted from the second pressure chamber 74 to the automatic control system 90. Based on the feedback pressure signals 100 and 104, the automatic control system 90 respectively transmits a first pressure value 108 and a second pressure value 110 to the first pressure chamber 68 and the second pressure chamber 74. Because the relative height between the carrier and the retaining ring can be automatically adjusted, it is unnecessary to shutdown the chemical mechanical polishing apparatus and to adjust the relative height between the carrier and the retaining ring.

Nakashiba et al. disclose a polishing device. In this device, the central and the peripheral regions of the wafer are uniformly polished. The Nakashiba et al. device controls the central and the peripheral regions of the elastic pad 2 by applying additional gas pressure on the wafer to adjust the pressure on the wafer. Further, Nakashiba et al. disclose that a

pressure F2 is applied on the pressure ring around the peripheral region of the wafer and the pressure distribution during the polishing process may be adjusted by adjusting the pressure F1 applied on the wafer holder. However, Nakashiba et al. fail to teach the automatic control system and the use of pressure feedback value to adjust the pressure during the polishing process.

Accordingly, Nakashiba et al. are not believed in any way to anticipate the specific features recited in Claim 1. Therefore, Claim 1 is believed to be allowable.

Substantially the same arguments as set forth above with regard to Claim 1 also apply to dependent Claims 4-6, which depend directly from Claim 1, respectively. Accordingly, each of the dependent claims is also believed to be allowable.

Claim 7 is directed to a wafer polishing head for planarizing a wafer. For example, referring to the non-limiting embodiment of Figs. 2A ans 2B, the wafer polishing head includes a carrier 62, a retaining ring 72, a first pressure chamber 68, a second pressure chamber 74, and an automatic control system 90. The a carrier 62 is configured to load the wafer 66. The retaining ring 72 surrounds the carrier 62. The first pressure chamber 68 has a first inner pressure disposed above the retaining ring 72. The second pressure chamber 74 has a second inner pressure disposed on the carrier 62. The automatic control system 90 is respectively coupled to the first pressure chamber 68 and the second pressure chamber 74.

Nakashiba et al. fail to teach the automatic control system. Accordingly, Nakashiba et al. are not believed in any way to anticipate the specific features recited in Claim 7. Therefore, Claim 7 is believed to be allowable.

Substantially the same arguments as set forth above with regard to Claim 7 also apply to dependent Claim 11, which depend directly from Claim 7. Accordingly, dependent Claim 11 is also believed to be allowable.

Consequently, in view of the present amendment, it is respectfully submitted that this application is in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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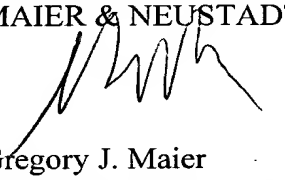

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